**Honors Winter Break Homework** Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**DUE MONDAY!** Period:\_\_\_\_Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Failure to show all work and write in complete sentences will result in LaSalle!**

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| 1) Write the slope-intercept form of a line using the points (-2, 3) and (0, 1). | 2) Write an equation of a line that passes through the given point and is perpendicular to the given line.  (-6, 8) ; slope = | |
| 3) Write an equation of a line that passes through the given point and is parallel to the given line.  (4,-5), | 4) What is the equation of the line that passes through the point (-9, 2) and is perpendicular to the line *y* = 3*x* – 12? | |
| 5) Which equation represents the graph?     1. y = 3/2x - 2 2. y = 2/3x – 1 3. y = 2/3x + 1 4. y = -2/3x + 1 5. y = -3/2x – 1 | 6) Write an equation of the line that passes through (4, 1) and is parallel to the line 6x -3y = 21?   1. y = -2x + 9 2. y = 0.5x – 1 3. y = -0.5x + 3 4. y = 2x – 9 5. y = 2x – 7 | |
| 7) How far apart are the two possible values for *r* in  The equation |*r* + 3| = 10?  A. –13  B. 7  C. 10  D. 14  E. 20 | 8) Which values of *z* satisfy  ? | |
| 9) Opposite vertices of a square in the standard (x,y) coordinate plane have coordinates (4, 16) and (20, 0). What are the coordinates for the center of this square? | 10) In the standard (x,y) coordinate plane, point X has coordinates (-4,0) and point Y has coordinates (0,-8). What are the coordinates of the midpoint of M?  a) (-6,-1)  b) (-2,-4)  c) (0,2)  d) (2,4)  e) (6,-1) | |
| 11) Find the length of the segment in the coordinate plane. | 12) Find the length of the segment in the coordinate plane. | |
| 13) Simplify: | 14) Simplify: | |
| 15) Simplify: | 16) Simplify: | |
| 17) Multiply: | 18) What are the roots of the equation w2 + 2w = 48? | |
| 19) Find the perimeter and area of the triangle below. | 20) What is the area, in coordinate units, of the triangle in the figure below? | |
| 21) Find the measure of the indicated angle. | 22) Find the measure of angle A: | |
| 23) Find the amount of carpeting in square feet that is needed to cover this floor space. | 24) A square is circumscribed about a circle with a 5-foot radius, as shown below. What is the area of the square, in square feet? | |
| 25) The perimeter of a square is 48 centimeters. What is its area, in square centimeters?  a) 12  b) 96  c) 144  d) 192  e) 2,304 | 26) A rectangular parking lot that is 3 feet longer than it is wide has an area of 550 square feet. How many feet long is the parking lot?  a) 19  b) 20  c) 22  d) 25  e) 28 | |
| 27) One route along flat terrain from Chicago to Urbana is to drive south from Chicago 300 miles to Urbana, then at Urbana, to drive east 200 miles to Bloomington. If a straight flat road existed between Chicago and Bloomington, how many miles would it be? | | 28) Which side lengths do NOT form a right triangle?   1. 5, 12, 13 2. 10, 24, 28 3. 15, 36, 39 4. 50, 120, 130 |
| 29) In rectangle MNLO below, how much longer is the perimeter than the diagonal ML?  24 m  M N  18 m  O L | 30) The top of a ladder rests against a wall, 23 feet above the ground. The base of the ladder is 6 feet away from the wall. What is the length of the ladder? | |
| 31) Find the area of the triangle below. | 32) Find the measure of the exterior angle shown. | |
| 33) Graph the given triangle and classify it by its sides. Then determine if it is a right triangle.  *A*(2, 2), *B*(6, 2), *C*(4, 8). You MUST use the distance formula and slope formula! | | |
| 34) Find m∠V. | 35) Find the value of x and y. | |

For #36-38, determine if the two triangles are congruent. If so, write a congruency statement and identify what postulate is needed to prove congruency.

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| 36) | 37) | | 38) |
| 39. Given Δ ABC ≅ ΔDEF, find the values of x and y. | | 40. Find the measurement of the exterior angle. | |
| 41) Find SU in the figure below. | | 42) The lengths of the corresponding sides of 2 similar right triangles are in the ratio of 4:7. The hypotenuse of the smaller triangle is 20 inches long. How many inches long is the hypotenuse of the larger triangle? | |

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| 43) Find the value of ‘A’ in the triangle shown below. | | 44) What is the value of x? Round your answer to the nearest tenth. | |
| 45) Find the value of the given trigonometric ratio. | 46) Find the value of the given trigonometric ratio. | | 47) Find the value of the given trigonometric ratio. |
| 45) You are 50 feet from the screen at a drive-in movie. Your eye is on a horizontal line with the bottom of the screen and the angle of elevation to the top of the screen is 58°. How tall is the screen? | | 46) You are preparing to land an airplane. You are on a straight line approach path that forms a 3° vertical angle with the runway. What is the distance *d* along this approach path to your touchdown point when you are 500 feet above the ground? Round your answer to the nearest foot. | |
| 47) What are the values that would make the following expression undefined? | | 48) Find the value of x that makes the triangles similar. | |